

IN THE CLAIMS:

1-34. (Cancelled)

35. (Previously amended) A method for forming a semiconductor device, comprising the steps of:

a) forming an insulating film of a carbon-containing silicon oxide film over a substrate;

b) etching the insulating film using a resist pattern as a mask, thereby forming an interconnect groove in the insulating film;

c) filling the interconnect groove with a resist film;

d) performing an etching process, thereby removing a first region of the resist film, which exists outside the interconnect groove, and the resist pattern,

e) removing a second region of the resist film, which exists inside the interconnect groove,

f) forming a silicon oxide layer on an inner face of the interconnect groove,

g) depositing a metal film on the interconnect groove, and

h) filling the interconnect groove with the metal, thereby removing the metal film outside the interconnect and a surface film on the insulating film.

36. (Previously presented) The method of Claim 35, wherein the etching process uses an etching gas containing oxygen.

37. (Previously amended) The method of Claim 35, wherein the etching process is formed by a down flow technique in a vacuum of 13.3 Pa or less.

38. (Currently amended) The method of Claim 35, wherein the silicon oxide layer on the inner face of the interconnect groove ~~bottom and side faces of the interconnect groove~~ formed by an anisotropic RIE process in a vacuum of 13.3 Pa or less.

39. (Previously presented) The method of Claim 35, wherein the silicon oxide layer has a thickness of substantially 15 nm or less.

40. (Previously presented) The method of Claim 35, wherein the silicon oxide layer has a density of 2.0 g/cm^3 or more.